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Independent claim (one and only) of Japanese Kokai 11-239582

Title: Recovery bag for intercelom tissue

Recovery bag for intercelom tissue whereby tissue inside the body is gathered and stored outside the body, and characterized as being outfitted with a bag main body with an opening part, and a tube pathway means to discharge exteriorly at least some of the substance inside the aforementioned bag main body.

RECOVERY BAG FOR INTRACELOM TISSUE

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Inventor(s): SUGAI TOSHIYA

Applicant(s): OLYMPUS OPTICAL CO LTD

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EC Classification:

Equivalents:

Abstract

PROBLEM TO BE SOLVED: To recover intracelom tissues fetched to a bag main body to the outside of a body without spilling them, to reduce the volume of the bag main body at the time of recovering them and to easily recover them to the outside of the body.

SOLUTION: In this recovery bag of the intracelom tissues for fetching the intracelom tissues and recovering them to the outside of the body, a fastener for tightly sealing the port part 22 of the bag main body 21 provided with the port part 22 is provided and a pipeline tube 38 communicated inside the bag main body 21 for discharging gas and liquid materials inside the bag main body 21 to the outside is provided further. Thus, the bag main body 21 is taken out to the outside of the body without spilling the intracelom tissues once fetched to the bag main body 21.

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(71)出願人　000000376
オリンパス光学工業株式会社
東京都渋谷区幡ヶ谷２丁目43番２号

(72)発明者　菅井　俊哉
東京都渋谷区幡ヶ谷２丁目43番２号　オリンパス光学工業株式会社内

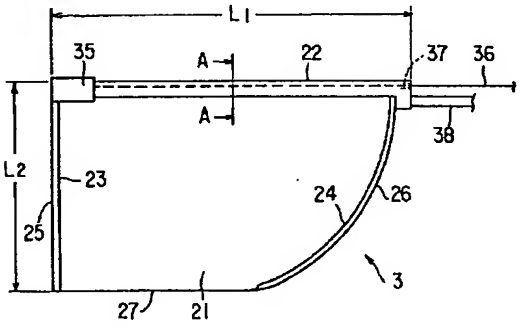
(74)代理人　弁理士　鈴江　武彦　（外４名）

(54)【発明の名称】　体腔内組織の回収袋

(57)【要約】

【課題】本発明は、袋本体に取り込んだ体腔内組織をこぼすことなく、体外に回収することができると共に、回収する際の袋本体の体積を小さくして体外に回収し易くすることができるようにした体腔内組織の回収袋を提供することを目的とする。

【解決手段】本発明は、体腔内組織を取り込んで体外に回収する体腔内組織の回収袋において、口部２２を有した袋本体２１の口部２２を密閉するファスナを設け、さらに袋本体２１内に連通し、袋本体２１の内部の気体や液状物を外部に排出するための管路チューブ３８を設けたものである。従って袋本体２１に一旦、取り込んだ体腔内組織をこぼすことなく、袋本体２１を体外に取り出すことができる。



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【特許請求の範囲】
【請求項１】体腔内組織を取り込んで体外に回収する体腔内組織の回収袋において、
口部を有した袋本体と、この袋本体内に連通し、上記袋本体内部の物の少なくとも一部を外部に排出するための管路手段とを具備することを特徴とする体腔内組織の回収袋。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、例えば、腹腔鏡下手術において、切除した体腔内組織を取り込んで体外に回収する場合に使用する体腔内組織の回収袋に関する。
【０００２】
【従来の技術】近年、トラカールや腹腔鏡等を用いて開腹することなく、腹腔内部位を手術する腹腔鏡下手術（ラパロスコピックサージャリー）が行われている。腹腔内で切除された臓器や患部等の組織を体外に回収する場合、従来では、柔軟な袋や収縮できる容器等を用いていた（特開昭７－３２８０１７号公報）。
【０００３】
【発明が解決しようとする課題】ところで、腹腔鏡下手術において、柔軟な袋や収縮できる容器等を用いて切除した組織を体外に回収する場合、その袋や容器等の内部に組織を取り込み、トラカールや小さな穿孔を通じてその袋や容器等ごと体外に引き出す。しかし、回収する組織が大きいと、全体が大きく膨らみ、小さな孔から引き出すことができなくなる。そこで、モースレーター等で組織を粉砕したり鋏鉗子で組織を切り刻むことが行われているが、組織を粉砕したり切り刻むことは採取した組織の病理検査の妨げになる。また、組織を刻んだり粉砕したりせずに回収しようとすると、腹壁に小切開を加えることになる等、腹腔鏡下手術のメリットが減少することになる。
【０００４】また、腹腔内で切除した組織を袋等の内部に取り入れた場合、固形分だけではなく血液等の液体分、さらには気体分も多く含まれている。また、組織の固形分も一般に柔らかく膨らんでいる。このため、内容積が増した状態にある。従ってトラカールや小さな穿孔を通じて体外に引き出す際に袋等の口部が絞られると、内部の気体や液体が抜けず、袋等を体外に引き出すことが困難になる。
【０００５】本発明は上記課題に着目してなされたもので、その目的とするところは、袋本体に取り込んだ体腔内組織を極力こぼすことなく、体外に回収することができると共に、回収する際の袋本体の体積を極力小さくして体外に取り出し易くするようにした体腔内組織の回収袋を提供することにある。
【０００６】
【課題を解決するための手段】本発明は、体腔内組織を取り込んで体外に回収する体腔内組織の回収袋において、口部を有した袋本体と、袋本体内に連通し、回収袋内部の物の少なくとも一部を外部に排出するための管路手段とを具備するものである。従って、袋本体内に一旦、取り込んだ体腔内組織をこぼすことなく、その回収袋をコンパクトにして体外に取り出すことができる。

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【０００７】
【発明の実施の形態】［第１の実施形態］図１乃至図７を参照して、本発明の第１の実施形態を説明する。図１は、例えば腹腔鏡下手術において使用する体腔内組織の回収具１を示す。この回収具１は挿入部２と、これの先端に装着される回収袋３とからなる。挿入部２は直線的で長尺なインナーロッド１１とこれに被嵌されるアウターチューブ１２とで構成され、アウターチューブ１２はインナーロッド１１の先端から手元付近までの領域でその外周に摺動自在に装着されている。すなわち、インナーロッド１１はアウターチューブ１２に対して進退自在に設けられ、かつ進退操作自在となっている。インナーロッド１１の内部には糸通路１５と管路手段挿通路１６が形成されている。アウターチューブ１２の先端部分はインナーロッド１１の先端より先に位置しており、このアウターチューブ１２の先端部分の内側により上記回収袋３を装填する収納室１７を形成している。インナーロッド１１の先端には回収袋３の後端、例えば後述する弾性部材３１，３２の後端部分を嵌め込んで係着する係止用溝部１８が形成されている。
【０００８】図４で示す如く、上記回収袋３は袋本体２１を有してなり、この袋本体２１は、柔軟なフイルム材によって形成された矩形状の２枚のシート部分を重ね合わせる形とすると共にその一辺部を口部２２とし、他の３つの辺部を封止した形の袋状のものであり、ここでは１枚の矩形シートを２つ折りにし、折り目と対向する辺を口部２２とし、折り目と口部２２以外の辺を例えば熱融着して封止している。２３，２４はその封止部である。
【０００９】また、口部２２の辺の長さをL1 、口部２２の辺に隣接する先端側の辺２５の長さをL2 とすると、L1 の方がL2 よりも長い。つまり、先端側に長い長方形の形状に形成されている。ただし、口部２２の辺に隣接する後端側の辺２６の部分は袋本体２１の底辺２７側程、先端側に向う傾斜辺となっている。この傾斜を付ける、いわゆる面取り手段により後述するように回収袋３を体外に取り出すときの抵抗を少なくする誘導機能を奏するようになっている。
【００１０】袋本体２１の口部２２の開口両端縁にはその辺に沿ってそれぞれ帯状に形成した弾性部材３１，３２が設けられている。この実施形態では袋本体２１を形成するフイルム材と一体に形成されているが、口部２２の開口両端縁に別の部材を取着して構成してもよい。弾性部材３１，３２の前後両端は口部２２の開口部の前後終端において連結されている。弾性部材３１，３２は口

部２２の開口を広げる向きに付勢する弾性力を有し、通常、図６で示すように、口部２２の開口を広げている。

【００１１】袋本体２１の口部２２にはその開口部を封止し、回収袋３を密閉する手段が設けられている。ここでは、ファスナー３０の形式でその密閉手段が構成されている。すなわち図５で示す如く、袋本体２１の口部２２の開口両端縁において対向する一方の弾性部材３１の内面には係止受け用溝３３が口部２２の辺に沿って全長にわたり形成されている。また、他方の弾性部材３２の内面にはその係止受け用溝３３に嵌まり込んで係止する係止用突条部３４が同じく口部２２の辺に沿って全長にわたり形成されている。そして、後述するファスナーコマ３５により係止用溝３３に係止受け用突条部３４を押し付けると、弾性的に変形しながら係止用突条部３４が係止受け用溝３３内に嵌まり込んで係止することにより口部２２を封止するようになっている。

【００１２】上記ファスナーコマ３５は口部２２の弾性部材３１，３２に装着してなり、その弾性部材３１，３２をレールとしてガイドされ、口部２２の辺方向に沿って移動できるように装着されている。ファスナーコマ３５は両方の弾性部材３１，３２を挟み込むものであり、口部２２を開いておくときには図６で示す如く先端側に位置させておき、図７で示す如くファスナーコマ３５を後端側に移動させることにより口部２２を閉じるようになっている。

【００１３】ファスナーコマ３５には牽引用操作索条としての糸３６が連結されている。糸３６は口部２２内を通り、弾性部材３１，３２の後端部分に形成したガイド孔３７を通じて後方に貫通し、後方へ延出するようになっている。

【００１４】さらに口部２２の弾性部材３２における後端部分には管路チューブ３８が接続されている。この管路チューブ３８の先端は袋本体３内に開口しており、管路チューブ３８は袋本体３内に連通するようになっている。尚、図１で示す如く、管路チューブ３８の先端は口部２２の付近で袋本体３内の底部に向けて開口しているが、管路チューブ３８の先端を延長して袋本体３内の底部近くで開口させるようにしてもよい。この場合には後述するような管路チューブ３８を通じての吸引排出作用を安定的に行うことが可能となる。

【００１５】上記糸３６は回収袋３を回収具１に装着したとき、その回収具１の糸通路１５に挿通され、管路チューブ３８は回収具１の管路手段挿通路１６に挿通され、いずれも回収具１の後端から後方へ延出させられるようになっている。糸３６の後端には球状の操作つまみ３９が取着されている。管路チューブ３８の後端には後述する吸引装置４０に接続するためのコネクタ４１が設けられている。

【００１６】上記吸引装置４０は図３で示す如く、吸引ポンプ４２の他、吸引瓶４３が付設され、管路チューブ３８は吸引瓶４３を経て吸引ポンプ４２に接続されるようになっている。また、装置本体４４の前面には各種スイッチや各種メータを備えた操作パネル４５が設けられている。尚、吸引装置の吸引源としては装置本体４４内に吸引ポンプを設けずに手術室の壁吸引装置を利用したものでもよい。

【００１７】次に、腹腔鏡下手術において、上記回収具１を使用する場合の作用について説明する。まず、図１乃至図３で示す如く、袋本体２１を畳んで丸めた回収袋３を回収具１の収納室１７内に収納する。この回収袋３を装着した回収具１を用いて体腔内組織を回収するには図示しないトラカール等を通じてその挿入部２を腹腔内に導入する。腹腔内に導入したところで図６で示す如く、アウターチューブ１２に対してインナーロッドを前進させて収納室１７を開放すると、ファスナーコマ３５は予め先端側に位置させられているため、口部２２は弾性部材３１，３２の弾性復元作用により自ら開く。口部２２の開きが小さい場合、または弾性部材３１，３２等による自然に開口する機能がない場合には上記管路チューブ３８を通じて炭酸ガス等の加圧流体を袋本体２１内に吹き込む。すると、その袋本体２１が内部圧力で膨らみ、口部２２を強制的に開くことができる。

【００１８】図６は加圧流体を袋本体２１内に吹き込んだときの状態であり、同図中、細線で表示する矢印４６は加圧流体の流れ込み方向を示し、袋本体２１内に吹き込まれた加圧流体はその圧力で、太い線で表示する矢印４７の向きに袋本体２１の口部２２を大きく押し広げる。このように袋本体２１の口部２２が簡単に開けるので他の器具を用いての開口作業を２次元画面の観察下で行う必要がなくなる。また、自然または簡単に口部２２を開かせることができるので、体腔内組織を回収する作業の能率が向上する。

【００１９】尚、加圧流体を供給することにより気腹圧力が過大になろうとするが、この過剰な気体は気腹器に内蔵された圧力調整機能により排出され、加圧流体の流入があっても腹腔内の圧力は常に適切な値に維持される。

【００２０】次に、把持鉗子等を補助的に用いて腹腔鏡下手術により切除した組織４８を、広げた口部２２から回収袋３内に取り込む。この後、図７で示す如く、操作つまみ３９により糸３６を引き、口部２２に沿ってファスナーコマ３５を後端まで移動させて、口部２２を閉じる。このとき、管路チューブ３８を吸引装置４０に接続して吸引を行うと、袋本体２１が収縮しようとするので、口部２２の封止動作がスムーズに行われるようになる。また、このときの液漏れも少ない。この封止時の吸引作用、さらには袋本体２１の口部２２が完全に閉じた後にも管路チューブ３８を通じて吸引装置４０による吸引を行う。すると、図７で示す如く、袋本体２１内の気体や液状物４９が吸引排出され、袋本体２１は小さく収

縮することができる。さらに吸引圧力により袋本体２１が強く収縮し、偏平になると共に、その容積が小さくなる。

【００２１】この後、アウターチューブ１２を前進させて回収袋３を包み込むようにして再生された収納室１７内に回収袋３を取り込む。このとき、袋本体２１は前後方向に長い長方形であり、しかも、後端側の辺２６の部分は袋本体２１の底辺２７側程、先端側に向う傾斜となっているために収納室１７内に回収袋３を比較的抵抗なく容易に取り込むことができる。また、組織４８の取り込み量が多く、回収袋３を収納室１７内に取り込むことが困難な場合においては、収納室１７内に取り込むことなく、回収具１と共に、トラカールや小さな穿孔を通じて体外に引き出すが、そのときにも抵抗なく容易に体外に取り出すことができる。

【００２２】回収袋３の袋本体２１は偏平シート状であり、偏平に収縮するため、回収袋３を折り畳んだり丸く畳んだりし易い。このため、畳んで収納室１７内に取り込んだり、回収具１と共にトラカールや小さな穿孔を通じて体外に引き出すことが可能である。この際にも抵抗なく体外に取り出すことができる。また、インナーロッド１１の先端に回収袋３を係着するため、そのインナーロッド１１を回転して袋本体２１を回せば、丸めるように小さく畳むこともできる。

【００２３】以上の如く、体腔内で切除した組織４８を回収袋３内に取り込むと共に、流動物を排出するため、さらにはその後、その回収袋３の口部２２を密閉するから、回収袋３を体外に取り出す際、内容物が口部２２からこぼすことがない。また、回収袋３内に取り込まれた空気や、血液などの液状物は管路チューブ３８を通じて吸引し、回収袋３内から排出するようにしたから、組織を取り込んだ回収袋３の容積を小さくすることができ、体積を小さくして回収袋３を体外へ容易に取り出すことができるようになる。

【００２４】［第２の実施形態］図８及び図９を参照して、本発明の第２の実施形態を説明する。ただし、第１の実施形態と同一の構成は同一の符号を付し、その詳細な説明は省略する。

【００２５】この実施形態の回収袋３は袋本体２１の一側面に圧迫補助用糸状部材５１を付設し、この糸状部材５１により袋本体２１を折り畳めるようにしたものである。すなわち糸状部材５１は複数の糸部分５１ａ，５１ｂ，５１ｃに分かれ、各糸部分５１ａ，５１ｂ，５１ｃの先端は袋本体２１の外表面における底辺部近くの糸取付け部５２ａ，５２ｂ，５２ｃに取着されている。糸取付け部５２ａ，５２ｂ，５２ｃは袋本体２１の底辺部の全長の範囲において略均等に分散して配置されている。ここでは３つの糸取付け部５２ａ，５２ｂ，５２ｃを設けているから底辺部の先端と後端と中央の位置に設けられることになる。

【００２６】また、各糸部分５１ａ，５１ｂ，５１ｃは袋本体２１の口部２２近くの上端辺部に配設したガイドループ５３ａ，５３ｂ，５３ｃに案内されてから袋本体２１の上端後部に導かれ、一本の糸状部材５１となって回収具１の挿入部２に形成される図示しないガイド通路を通じて回収具１の手元側に導かれ、体外から牽引操作できるようになっている。

【００２７】そして、この回収袋３は前述した第１の実施形態と同様に使用されるが、袋本体２１の内部に組織４８を取り込んだ後、体外から糸状部材５１を牽引すると、袋本体２１は各糸部分５１ａ，５１ｂ，５１ｃは袋本体２１の底辺部近くにある糸取付け部５２ａ，５２ｂ，５２ｃを引いて袋本体２１の底部を引き上げることにより、図９で示す如く、袋本体２１を強制的に折り畳む。従って、袋本体２１を確実に折り畳むことができるため、体外に回収する作業が容易であり、また、迅速に行うことが可能となる。

【００２８】尚、本発明は前述した各実施形態のものに限られるものではない。例えば口部の密封手段としてその口部内面に粘着性を付与して粘着させるものでもよく、この場合、袋本体内に加圧流体を吹き込んで口部を開くことができる。

【００２９】また、袋本体内に加圧流体を吹き込めば口部が開き、吸引をかければ閉じるようにした密閉手段としてもよい。また、他の器具を用いて口部の閉じる操作を行うようにしてもよい。

【００３０】また、口部を丸めたり折り畳んだりして密封するようにしてもよい。この場合いわゆるマジックテープのようなファスナーを付設するとよい。さらに、袋本体の口部周縁に沿って紐部材を付設し、その紐部材を牽引することにより口部を閉じる、いわゆるポーチの口紐形式の密封手段であってもよい。

【００３１】また、袋本体の口部密閉手段は袋本体の口部周縁に設けられた弾性部材の弾性により閉じるようにしたものでもよく、この場合には牽引紐部材で牽引して袋本体の口部を開くようにするとよい。また、袋本体の口部密閉手段はその口部が自ら開閉しない自然におかれたままの状態を維持し、管路手段により袋本体内を吸引することにより口部を閉じるものであってもよい。

【００３２】さらには袋本体の口部はこれの周縁に設けられた弾性部材の弾性により開くものであり、袋本体の口部を密閉する手段は牽引紐部材で弾性部材を締め付けて袋本体の口部を閉じるようにしたものであってもよい。また袋本体の強度を高めるためにメッシュ入りのシート材で形成してもよい。

【００３３】第２の実施形態では、糸状部材により袋本体を折り畳むようにしたが、袋本体の形状等によっては糸状部材の数や配置を変えて折り畳み方を変えてもよく、また、袋本体を圧迫して畳み込むようにしてもよい。

【００３４】本発明は前述した実施形態のものに限定されない。また、上記実施形態の説明によれば少なくとも以下に列記する事項及びその任意の組み合わせの事項のものが得られる。

【００３５】<付記>

１．体腔内組織を取り込んで体外に回収する体腔内組織の回収袋において、口部を有した袋本体と、袋本体内に連通し、回収袋内部の物の少なくとも一部を外部に排出するための管路手段とを具備することを特徴とする体腔内組織の回収袋。

２．体腔内組織を取り込んで体外に回収する体腔内組織の回収袋において、口部を有した袋本体と、袋本体の口部を密閉する手段と、袋本体内に連通し、回収袋内部の物の少なくとも一部を外部に排出するための管路手段とを具備することを特徴とする体腔内組織の回収袋。

３．袋本体の口部を密閉する手段は袋本体の口部周縁に設けられたファスナーであることを特徴とする第２項に記載の体腔内組織の回収袋。

４．袋本体の口部を密閉する手段は袋本体の口部周縁に設けられた紐部材を牽引して口部を密閉するものであることを特徴とする第２項に記載の体腔内組織の回収袋。

【００３６】５．袋本体の口部を密閉する手段は袋本体の口部周縁に設けられた弾性部材の弾性により閉じるものであり、牽引紐部材で牽引して袋本体の口部を開くようにしたものであることを特徴とする第２項に記載の体腔内組織の回収袋。

６．袋本体の口部はこれの周縁に設けられた弾性部材の弾性により開くものであり、袋本体の口部を密閉する手段は牽引紐部材で弾性部材を締め付けて袋本体の口部を閉じるようにしたものであることを特徴とする第２項に記載の体腔内組織の回収袋。

７．袋本体の口部を密閉する手段は袋本体の口部が自ら開閉しない自然におかれたままの状態を維持し、管路手段により袋本体内を吸引することにより口部を閉じるものであることを特徴とする第２項に記載の体腔内組織の回収袋。

８．管路手段は吸引手段に連通可能であり、吸引手段によって袋本体の内部の内容物の少なくとも一部を外部に排出し、袋本体を圧縮可能なものとしたことを特徴とする第１～７項に記載の体腔内組織の回収袋。

【００３７】９．袋本体の口部を密閉する手段は袋本体の口部が初期状態において縮小されており、体内に挿入後、袋本体の内部に流体を流入させることにより袋本体の口部を、組織を取り込むのに適した形まで広げることを特徴とする第２項に記載の体腔内組織の回収袋。

１０．管路手段を通じて袋本体の内部に流体を流入させることにより袋本体の口部を開放させることを特徴とする第８項に記載の体腔内組織の回収袋。

【００３８】１１．体腔内組織を体外に回収する体腔内組織の回収袋において、袋本体の口部をその開口部の長手方向に対して収縮変形させずに開口部の長手方向に対して交差する向きで接離して、袋本体の口部を開閉可能であることを特徴とする体腔内組織の回収袋。

１２．袋本体の口部に弾性部材を配設し、その弾性部材により袋本体の口部を開く向きに付勢するようにしたことを特徴とした第１１項に記載の体腔内体組の回収袋。

１３．袋本体の口部に弾性部材を配設し、その弾性部材により袋本体の口部を開く向きに付勢するようにしたことを特徴とした第１１項に記載の体腔内体組の回収袋。

【００３９】１４．袋本体の形状は略長方形の形状をしており、その袋本体の口部が、その長辺に位置して設けられていることを特徴とする前記各項に記載の体腔内組織の回収袋。

１５．袋本体を体外に取り出す際に、進行方向となる辺の袋本体の底辺側部分が、少なくとも体外への取り出しに際して抵抗が少なくなるように面取りされていることを特徴とする第１４項に記載の体腔内組織の回収袋。

１６．体腔内組織を体外に回収する体腔内組織の回収袋において、袋本体の周辺の少なくとも一つ以上の部分と、その他の少なくとも一つ以上の部分とを糸状の部材によって連結し、糸状部材を牽引することによって、袋本体を畳んで縮めることが可能なものとしたことを特徴とする前記各項に記載の体腔内組織の回収袋。

１７．体腔内組織を回収袋に入れて体外に回収する方法において、回収袋を体内に挿入した後、回収袋内に体組織を収納して回収袋の口部を密封し、回収袋の内容物の少なくとも一部を外部に排出することによって、回収袋の体積を縮小させた後、回収袋を体外に取り出す体腔内組織の回収方法。

【００４０】

【発明の効果】以上説明したように本発明の体腔内組織の回収袋によれば、袋本体に一旦、取り込んだ組織をこぼすことなく、袋本体と共に体外に取り出すことができる。その際、袋本体の体積を小さくできるから、体外へ回収袋を取り出し易い。

【図面の簡単な説明】

【図１】第１の実施形態に係る体腔内組織の回収具の縦断面図。

【図２】回収袋を装着した上記回収具の正面図。

【図３】上記回収具の斜視図。

【図４】上記回収袋の側面図。

【図５】図４中、Ａ－Ａ線に沿う部分の断面図。

【図６】上記回収具の使用時の斜視図。

【図７】上記回収具の使用時の斜視図。

【図８】口部を閉じた回収袋の斜視図。

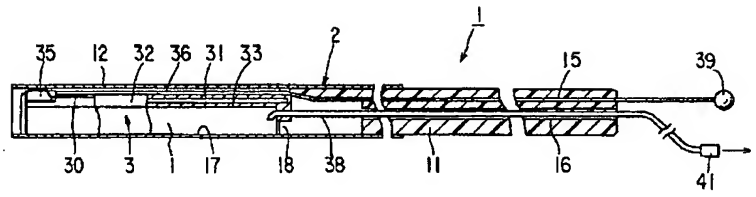
【図９】第２の実施形態に係る回収袋の斜視図。

【符号の説明】

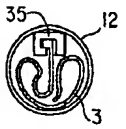
１…回収具、２…挿入部、３…回収袋、１７…収納室、２１…袋本体、２２…口部、３１…弾性部材、３２…弾性部材、３３…溝部、３４…突条部、３５…ファスナー

コマ、38…管路チューブ。

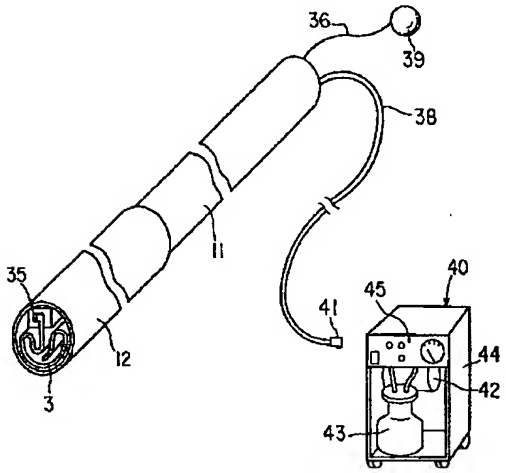
【図1】



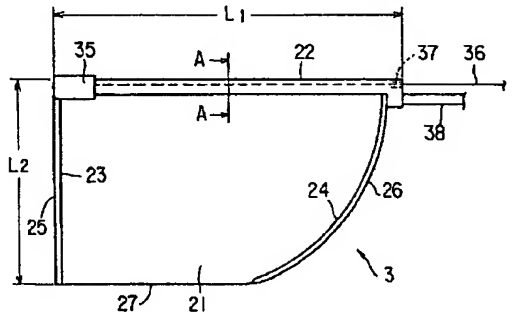
【図2】



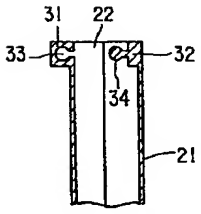
【図3】



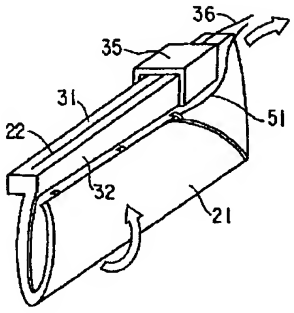
【図4】



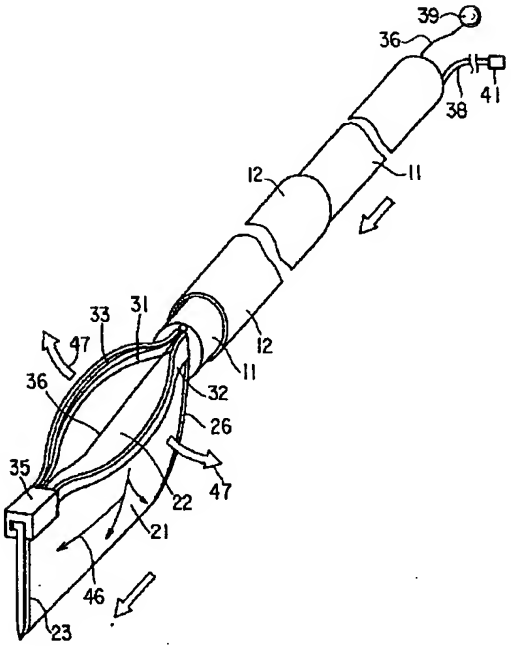
【図5】



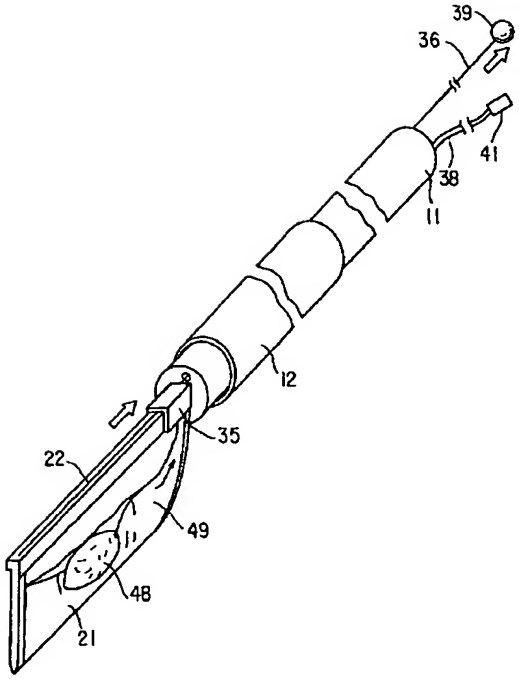
【図9】



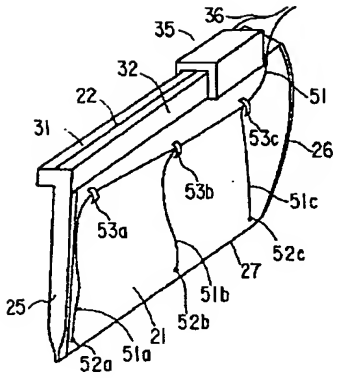
【図6】



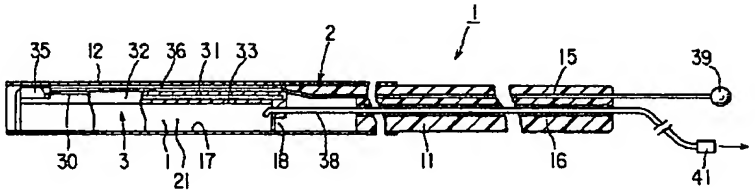
【図７】



【図８】



【手続補正書】
【提出日】平成１０年６月３日
【手続補正１】
【補正対象書類名】図面
【補正対象項目名】図１
【補正方法】変更
【補正内容】
【図１】



Machine translation of Japanese Patent Appl. 11-239582

CLAIMS

[Claim(s)]

[Claim 1] The recovery bag of the organization in a coelome characterized by providing the duct means for it being open for free passage in the body of a bag with the regio oralis, and this body of a bag, and discharging some objects [at least] inside the above-mentioned body of a bag outside in the recovery bag of the organization in a coelome which incorporates the organization in a coelome and are collected outside of the body.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the recovery bag of the organization in a coelome used when incorporating the organization in a coelome which excised and collecting outside of the body for example, in a laparoscope poor way.

[0002]

[Description of the Prior Art] The laparoscope poor way (RAPAROSUKO pick surgery) on which an operation is performed at least for the interior of the abdominal cavity is performed without making an incision in the abdomen in recent years using TORAKARU, the laparoscope, etc. When the organizations of the organ, the affected part, etc. which were excised by intraperitoneal were collected outside of the body, the flexible bag, the container which can be contracted were used in the former (JP,7-328017,A).

[0003]

[Problem(s) to be Solved by the Invention] by the way, the case where the organizations which excised using the flexible bag, the container which can be contracted are collected outside of the body in a laparoscope poor way -- the interior, such as the bag, container, etc., -- an organization -- incorporating -- TORAKARU and small punching -- leading -- the bag, container, etc. -- ** -- it pulls out outside of the body. When the organization which collects is large, the whole swells greatly and it becomes impossible however, to pull out from a small hole. Then, although an organization is ground by mho SURETA etc. or chopping up an organization with scissors forceps is performed, an organization is ground or it becomes the hindrance of the biopsy of the organization which extracted to chop up. Moreover, when it is going to collect without mincing or grinding an organization, the merit of a laparoscope poor [at small incision being added to an abdominal wall etc.] way will decrease.

[0004] Moreover, when the organization which excised by intraperitoneal is taken in to the interior, such as a bag, parts for many gas are also contained in parts for a liquid, such as not only solid content but blood, and a pan. Moreover, generally the solid content of an organization has also swollen softly. For this reason, it is in the condition

that content volume increased. Therefore, if regio oralis, such as a bag, is extracted in case it pulls out outside of the body through TORAKARU or small punching, an internal gas or an internal liquid will not fall out, but it will become difficult to pull out a bag etc. outside of the body.

[0005] The place which this invention was made paying attention to the above-mentioned technical problem, and is made into the purpose is to make small the volume of the body of a bag at the time of collecting as much as possible, and offer the recovery bag of the organization in a coelome which it was made to make it easy to take out outside of the body while being able to collect outside of the body, without spilling the organization in a coelome which was in confusion on the body of a bag as much as possible.

[0006]

[Means for Solving the Problem] In the recovery bag of the organization in a coelome which incorporates the organization in a coelome and are collected outside of the body, this invention is open for free passage in the body of a bag with the regio oralis, and the body of a bag, and possesses the duct means for discharging some objects [at least] inside a recovery bag outside. Therefore, in the body of a bag, without spilling the organization in a coelome which was in confusion, the recovery bag can be used as a compact and can once be taken out outside of the body.

[0007]

[Embodiment of the Invention] The 1st operation gestalt of this invention is explained with reference to [operation gestalt of ** 1st] drawing 1 thru/or drawing 7 . Drawing 1 shows the recovery implement 1 of the organization in a coelome used in a laparoscope poor way. This recovery implement 1 consists of the insertion section 2 and a recovery bag 3 with which it is equipped at the tip of this. It consists of an inner rod [that the insertion section 2 is linear and long picture] 11 and an outer tube 12 inserted in this, and the periphery is equipped with the outer tube 12 free [sliding] in the field from the tip of the inner rod 11 to near a hand. Namely, to an outer tube 12, it is prepared free [an attitude] and attitude actuation is free for the inner rod 11. The yarn path 15 and the duct means insertion way 16 are formed in the interior of the inner rod 11. It is located by the amount of [of an outer tube 12] point ahead of the tip of the inner rod 11, and it forms the receipt room 17 which loads with the above-mentioned recovery bag 3 by the inside for a point of this outer tube 12. The slot 18 for a stop which inserts in the back end 31 of the recovery bag 3, for example, the elastic member mentioned later, and the back end part of 32, and is engaged is formed at the tip of the inner rod 11.

[0008] As drawing 4 shows, the above-mentioned recovery bag 3 has the body 21 of a bag, and becomes. This body 21 of a bag While considering as the form where the sheet part of two sheets of the shape of a rectangle formed of flexible film material is piled up, the one-side section is made into the regio oralis 22. It is the saccate thing of the form which closed other three side sections, and the rectangle sheet of one sheet is used as 2 chip boxes here, a fold and the side which counters are made into the regio oralis 22, heat weld is carried out, for example and the sides other than a fold and regio-oralis 22 are closed. 23 and 24 are the closure section.

[0009] Moreover, it is the die length of the side 25 by the side of the tip which adjoins the side of L1 and the regio oralis 22 in the die length of the side of the regio oralis 22 L2 It is L1 when it carries out. The direction is L2. It is long. That is, it is formed in the

configuration of a rectangle long to a tip side. However, the part of the side 26 by the side of the back end which adjoins the side of the regio oralis 22 serves as the other inclination side like the base 27 side of the body 21 of a bag at the tip side. The induction function which lessens resistance when taking out the recovery bag 3 outside of the body so that it may mention later with the so-called beveling means which attaches this inclination is done so.

[0010] The elastic member 31 formed in band-like along the side, respectively and 32 are prepared in the opening both-ends edge of the regio oralis 22 of the body 21 of a bag. Although formed in the film material and one which form the body 21 of a bag with this operation gestalt, another member may be attached and constituted on the opening both-ends edge of the regio oralis 22. An elastic member 31 and 32 order both ends are connected in the opening order termination of the regio oralis 22. An elastic member 31 and 32 had the elastic force energized to the sense which extends opening of the regio oralis 22, and as drawing 6 shows, they have usually extended opening of the regio oralis 22.

[0011] The opening is closed to the regio oralis 22 of the body 21 of a bag, and a means to seal the recovery bag 3 is established. Here, the sealing means consists of formats of a fastener 30. That is, as drawing 5 shows, while countering in the opening both-ends edge of the regio oralis 22 of the body 21 of a bag is formed in the inside of an elastic member 31 for the slot 33 for stop receptacles covering the overall length along the side of the regio oralis 22. Moreover, similarly the protruding line section 34 for a stop which gets into the slot 33 for stop receptacles, and is stopped is formed in the inside of the elastic member 32 of another side covering the overall length along the side of the regio oralis 22. And if the protruding line section 34 for stop receptacles is forced on the slot 33 for a stop by the fastener coma 35 mentioned later, when the protruding line section 34 for a stop fits in in the slot 33 for stop receptacles and stops, the regio oralis 22 will be closed, deforming elastically.

[0012] It comes to equip the above-mentioned fastener coma 35 the elastic member 31 of the regio oralis 22, and 32, the elastic member 31 and 32 are guided to it as a rail, and it is equipped with it so that it can move along the direction of the side of the regio oralis 22. A fastener coma 35 puts both elastic members 31 and 32, when it opens the regio oralis 22, as drawing 6 shows, it is located in a tip side, and it closes the regio oralis 22 by moving a fastener coma 35 to a back end side, as drawing 7 shows.

[0013] The yarn 36 as an actuation wire rope for towage is connected with a fastener coma 35. It passes along the inside of the regio oralis 22, and penetrates back through the guide hole 37 formed in the elastic member 31 and the back end part of 32, and yarn 36 extends back.

[0014] Furthermore, the duct tube 38 is connected to the back end part in the elastic member 32 of the regio oralis 22. Opening of the tip of this duct tube 38 is carried out into the body 3 of a bag, and the duct tube 38 is open for free passage in the body 3 of a bag. In addition, although opening of the tip of the duct tube 38 is carried out towards the pars basilaris ossis occipitalis within the body 3 of a bag near the regio oralis 22, it extends the tip of the duct tube 38 and you may make it make it it carry out opening near the pars basilaris ossis occipitalis within the body 3 of a bag, as drawing 1 shows. In this case, it becomes possible to perform stably suction exocytosis which leads the duct tube 38 which is mentioned later.

[0015] When it equips the recovery implement 1 with the recovery bag 3, the above-mentioned yarn 36 is inserted in the yarn path 15 of the recovery implement 1, the duct tube 38 is inserted in the duct means insertion way 16 of the recovery implement 1, and all are made to extend from the back end of the recovery implement 1 to back to it. The spherical actuation tongue 39 is attached in the back end of yarn 36. The connector 41 for connecting with the aspirator 40 mentioned later is formed in the back end of the duct tube 38.
[0016] As drawing 3 shows the above-mentioned aspirator 40, the suction bottle 43 besides a suction pump 42 is attached, and the duct tube 38 is connected to a suction pump 42 through a suction bottle 43. Moreover, the control panel 45 equipped with various switches or various meter is formed in the front face of the body 44 of equipment. In addition, what used the wall aspirator of an operating room, without preparing a suction pump in the body 44 of equipment as a source of suction of an aspirator may be used.
[0017] Next, in a laparoscope poor way, the operation in the case of using the above-mentioned recovery implement 1 is explained. First, as drawing 1 thru/or drawing 3 show, the recovery bag 3 which folded and rounded off the body 21 of a bag is contained in the receipt room 17 of the recovery implement 1. For collecting the organizations in a coelome using the recovery implement 1 equipped with this recovery bag 3, that insertion section 2 is introduced through TORAKARU which is not illustrated intraperitoneal. If an inner rod is advanced to an outer tube 12 and the receipt room 17 is opened as drawing 6 shows in the place introduced into intraperitoneal, since a fastener coma 35 is beforehand located by the tip side, the regio oralis 22 will open it itself according to an elastic member 31 and an elastic restoration operation of 32. When the aperture of the regio oralis 22 is small, or when there is no function by the elastic member 31 and 32 grades which carries out opening automatically, pressurization fluids, such as carbon dioxide gas, are blown into the body 21 of a bag through the above-mentioned duct tube 38. Then, the body 21 of a bag can swell with internal pressure, and the regio oralis 22 can be opened compulsorily.
[0018] Drawing 6 is in the condition when blowing a pressurization fluid into the body 21 of a bag, and among this drawing, the arrow head 46 displayed with a thin line shows the direction of an influx of a pressurization fluid, and the pressurization fluid blown into the body 21 of a bag is the pressure, and extends greatly the regio oralis 22 of the body 21 of a bag to the sense of the arrow head 47 displayed by the thick line. Since the regio oralis 22 of the body 21 of a bag opens simply, it becomes unnecessary thus, to do the opening activity using other instruments under observation of a two-dimensional screen. Moreover, since the regio oralis 22 can be made to open automatically or simply, the efficiency of the activity which collects the organizations in a coelome improves.
[0019] In addition, although a pneumoperitoneum pressure tends to become excessive by supplying a pressurization fluid, an intraperitoneal pressure is maintained by the always suitable value, even if this superfluous gas is discharged by the pressure regulation function built in the pneumoperitoneum apparatus and has the inflow of a pressurization fluid.
[0020] Next, the organization 48 which excised by the laparoscope poor way, using grasping forceps etc. auxiliary is incorporated in the recovery bag 3 from the opened regio oralis 22. Then, as drawing 7 shows, yarn 36 is lengthened with the actuation

tongue 39, a fastener coma 35 is moved to the back end along with the regio oralis 22, and the regio oralis 22 is closed. If it draws in by connecting the duct tube 38 to an aspirator 40 at this time, since the body 21 of a bag tends to contract, closure actuation of the regio oralis 22 comes to be performed smoothly. Moreover, there are also few liquid spills at this time. The suction effect at the time of this closure, and also after the regio oralis 22 of the body 21 of a bag closes completely further, suction by the aspirator 40 is performed through the duct tube 38. Then, as drawing 7 shows, suction discharge is carried out and the gas and the liquefied object 49 within the body 21 of a bag can contract the body 21 of a bag small. The volume becomes small, while the body 21 of a bag furthermore contracts strongly with suction pressure and becoming flat.

[0021] Then, an outer tube 12 is advanced and the recovery bag 3 is incorporated in the receipt room 17 reproduced as wrapped in the recovery bag 3. At this time, the body 21 of a bag is a rectangle long to a cross direction, and moreover, since the part of the side 26 by the side of the back end serves as the other inclination like the base 27 side of the body 21 of a bag at the tip side, it can incorporate the recovery bag 3 easily [there is comparatively no resistance and] in the receipt room 17. Moreover, although pulled out outside of the body through TORAKARU or small punching with the recovery implement 1, without incorporating in the receipt room 17 when there are many amounts of incorporation of an organization 48 and it is difficult to incorporate the recovery bag 3 in the receipt room 17, it can take out outside of the body easily [also then there is no resistance and].

[0022] The body 21 of a bag of the recovery bag 3 is a flat sheet-like, and in order to contract flatly, it folds up the recovery bag 3, or folds it round, or it is easy to carry out it. For this reason, it is possible to fold and to pull out outside of the body through TORAKARU or small punching in to incorporate in the receipt room 17 **** with the recovery implement 1. It can take out outside of the body that there is no resistance also in this case. Moreover, since the recovery bag 3 is engaged at the tip of the inner rod 11, if the inner rod 11 is rotated and the body 21 of a bag is turned, it can also fold small so that it may round off.

[0023] Since the regio oralis 22 of the recovery bag 3 is further sealed after that in order to discharge a fluid while incorporating the organization 48 which excised within the coelome like the above in the recovery bag 3, in case the recovery bag 3 is taken out outside of the body, contents do not spill from the regio oralis 22. Moreover, since the air incorporated in the recovery bag 3 and liquefied objects, such as blood, are attracted through the duct tube 38 and discharged out of the recovery bag 3, they can make small the volume of the recovery bag 3 which incorporated the organization, can make the volume small, and can take out the recovery bag 3 easily to the outside of the body.

[0024] The 2nd operation gestalt of this invention is explained with reference to [operation gestalt of ** 2nd] drawing 8 , and drawing 9 . However, the same configuration as the 1st operation gestalt attaches the same sign, and the detailed explanation is omitted.

[0025] The recovery bag 3 of this operation gestalt attaches the yarn-like member 51 for pressure assistance to one side face of the body 21 of a bag, and enables it for this yarn-like member 51 to fold up the body 21 of a bag. That is, the yarn-like member 51 is divided into two or more yarn partial 51a, 51b, and 51c, and the tip of each yarn partial 51a, 51b, and 51c is attached in yarn anchoring section 52a near [in the outside

surface of the body 21 of a bag] the base part, 52b, and 52c. In the range of the overall length of the base part of the body 21 of a bag, it distributes equally [abbreviation] and yarn anchoring section 52a, 52b, and 52c are arranged. Here, since three yarn anchoring sections 52a, 52b, and 52c are prepared, it will be prepared in the location of the tip of a base part, the back end, and a center.

[0026] Moreover, after each yarn partial 51a, 51b, and 51c are guided at guide loop-formation 53a arranged in the about 22 regio oralis [of the body 21 of a bag] upper end part, 53b, and 53c, they are led to the upper limit posterior part of the body 21 of a bag. It is led to the hand side of the recovery implement 1 through the guide path which serves as the one yarn-like member 51 and is formed in the insertion section 2 of the recovery implement 1 and which is not illustrated, and has come to be able to carry out towage actuation from the outside of the body.

[0027] And although this recovery bag 3 is used like the 1st operation gestalt mentioned above If the yarn-like member 51 is led from the outside of the body after incorporating an organization 48 inside the body 21 of a bag By lengthening yarn anchoring section 52a in which each yarn partial 51a, 51b, and 51c have the body 21 of a bag near the base part of the body 21 of a bag, 52b, and 52c, and pulling up the pars basilaris ossis occipitalis of the body 21 of a bag, as drawing 9 shows, the body 21 of a bag is folded up compulsorily. Therefore, since the body 21 of a bag is certainly foldable, the activity collected outside of the body becomes possible [carrying out quickly easily].

[0028] In addition, this invention is not restricted to the thing of each operation gestalt mentioned above. For example, adhesiveness may be made to give and adhere to that opening circles side as a sealing means of the regio oralis, a pressurization fluid can be blown into the body of a bag in this case, and the regio oralis can be opened.

[0029] Moreover, it is good also as a sealing means closed when the regio oralis opened when blowing the pressurization fluid into the body of a bag, and applying suction. Moreover, it may be made to perform actuation which the regio oralis closes using other instruments.

[0030] Moreover, the regio oralis is rounded off or folded up and you may make it seal it. In this case, it is good to attach a fastener like the so-called piece of Velcro. Furthermore, you may be the sealing means of the **** format of the so-called Poti which attaches a string member along the regio-oralis periphery of the body of a bag, and closes the regio oralis by leading the string member.

[0031] Moreover, what was closed with the elasticity of an elastic member prepared in the regio-oralis periphery of the body of a bag is sufficient as the regio-oralis sealing means of the body of a bag, and it is good to lead by the towage string member in this case, and to open the regio oralis of the body of a bag. Moreover, the regio-oralis sealing means of the body of a bag may maintain a condition [having set / which the regio oralis does not open and close itself / automatically], and may close the regio oralis by attracting the inside of the body of a bag with a duct means.

[0032] The elasticity of an elastic member prepared in the periphery of this opens the regio oralis of the body of a bag, and a means to seal the regio oralis of the body of a bag binds an elastic member tight by the towage string member, and you may make it close the regio oralis of the body of a bag furthermore. Moreover, in order to raise the reinforcement of the body of a bag, you may form by the web material containing a mesh.

[0033] Although the yarn-like member folded up the body of a bag, how to change the number of yarn-like members and arrangement and fold up with the configuration of the body of a bag etc., may be changed, and the body of a bag is suppressed, and you may make it collapse with the 2nd operation gestalt.
[0034] This invention is not limited to the thing of the operation gestalt mentioned above. Moreover, according to explanation of the above-mentioned operation gestalt, the thing of the matter listed below at least and the matter of the combination of the arbitration is obtained.
[0035] The recovery bag of the organization in a coelome characterized by providing the duct means for it being open for free passage in the body of a bag with the regio oralis, and the body of a bag, and discharging some objects [at least] inside a recovery bag outside in the recovery bag of the organization in a coelome which incorporates the organization in a <additional remark> 1. coelome, and are collected outside of the body.
2. Recovery bag of organization in coelome characterized by providing body of bag with regio oralis, means to seal regio oralis of body of bag, and duct means for it being open for free passage in body of bag, and discharging some objects [at least] inside recovery bag outside in recovery bag of organization in coelome which incorporates organization in coelome and are collected outside of the body.
3. A means to seal the regio oralis of the body of a bag is the recovery bag of the organization in a coelome given in the 2nd term characterized by being the fastener formed in the regio-oralis periphery of the body of a bag.
4. A means to seal the regio oralis of the body of a bag is the recovery bag of the organization in a coelome given in the 2nd term characterized by being what leads the string member prepared in the regio-oralis periphery of the body of a bag, and seals the regio oralis.
[0036] 5. A means to seal the regio oralis of the body of a bag is the recovery bag of the organization in a coelome given in the 2nd term characterized by closing with the elasticity of an elastic member prepared in the regio-oralis periphery of the body of a bag, leading by the towage string member, and opening the regio oralis of the body of a bag.
6. It is the recovery bag of the organization in a coelome given in the 2nd term characterized by for the elasticity of an elastic member prepared in the periphery of this opening the regio oralis of the body of a bag, and for a means to seal the regio oralis of the body of a bag binding an elastic member tight by the towage string member, and closing the regio oralis of the body of a bag.
7. A means to seal the regio oralis of the body of a bag is the recovery bag of the organization in a coelome given in the 2nd term characterized by being what closes the regio oralis by maintaining a condition [having set / which the regio oralis of the body of a bag does not open and close itself / automatically], and attracting the inside of the body of a bag with a duct means.
8. A duct means is the recovery bag of the organization in a coelome given in the 1-7th terms characterized by could be open for free passage for the suction means, having discharged some contents [at least] inside the body of a bag outside with the suction means, and considering as what can compress the body of a bag.
[0037] 9. A means to seal the regio oralis of the body of a bag is the recovery bag of the organization in a coelome given in the 2nd term characterized by extending the regio

oralis of the body of a bag to the form of having been suitable for incorporating an organization by reducing the regio oralis of the body of a bag in the initial state, and making a fluid flow into the interior of the body of a bag after inserting in the inside of the body.
10. The recovery bag of the organization in a coelome given in the 8th term characterized by making the regio oralis of the body of a bag open wide by making a fluid flow into the interior of the body of a bag through a duct means.
[0038] 11. The recovery bag of the organization in a coelome characterized by the ability to attach and detach with the sense which crosses to the longitudinal direction of opening in the recovery bag of the organization in a coelome which collects the organizations in a coelome outside of the body, without carrying out contraction deformation of the regio oralis of the body of a bag to the longitudinal direction of the opening, and open and close the regio oralis of the body of a bag.
12. The recovery bag of a coelome corpus group given in the 11th term characterized by making it energize to the sense which arranges an elastic member in the regio oralis of the body of a bag, and opens the regio oralis of the body of a bag by the elastic member.
13. The recovery bag of a coelome corpus group given in the 11th term characterized by making it energize to the sense which arranges an elastic member in the regio oralis of the body of a bag, and opens the regio oralis of the body of a bag by the elastic member.
[0039] 14. The configuration of the body of a bag is the recovery bag of the organization in a coelome given in said each term which is carrying out the configuration of an abbreviation rectangle and is characterized by locating and preparing the regio oralis of the body of a bag in the long side.
15. The recovery bag of the organization in a coelome given in the 14th term characterized by beveling so that the amount of [of the body of a bag of the side used as a travelling direction] base flank may decrease on the occasion of the ejection to the outside of the body at least, in case the body of a bag is taken out outside of the body.
16. The recovery bag of the organization in a coelome given in each of said term characterized by to consider as what has possible folding and drawing in one's body of a bag by connecting at least one or more surrounding parts of the body of a bag, and other at least one or more parts by the yarn-like member, and leading a yarn-like member in the recovery bag of the organization in a coelome which collects the organizations in a coelome outside of the body.
17. The recovery approach of the organization in a coelome which takes out a recovery bag outside of the body after making the volume of a recovery bag reduce by containing body tissue in a recovery bag, sealing the regio oralis of a recovery bag, and discharging some contents [at least] of a recovery bag outside in the approach of putting the organization in a coelome into a recovery bag, and collecting outside of the body after inserting a recovery bag in the inside of the body.
[0040]
[Effect of the Invention] It can take out outside of the body with the body of a bag, without spilling the organization which was once in confusion on the body of a bag according to the recovery bag of the organization in a coelome of this invention, as explained above. Since the volume of the body of a bag can be made small in that case,

it is easy to take out a recovery bag to the outside of the body.

PATENT ABSTRACTS OF JAPAN

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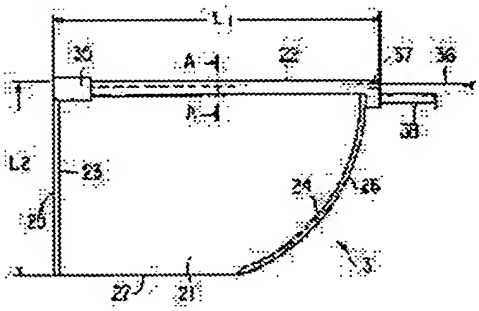
(71)Applicant : **OLYMPUS OPTICAL CO LTD**

(72)Inventor : **SUGAI TOSHIYA**

(54) RECOVERY BAG FOR INTRACELOM TISSUE



(57)Abstract:

PROBLEM TO BE SOLVED: To recover intracelom tissues fetched to a bag main body to the outside of a body without spilling them, to reduce the volume of the bag main body at the time of recovering them and to easily recover them to the outside of the body.

SOLUTION: In this recovery bag of the intracelom tissues for fetching the intracelom tissues and recovering them to the outside of the body, a fastener for tightly sealing the port part 22 of the bag main body 21 provided with the port part 22 is provided and a pipeline tube 38 communicated inside the bag main body 21 for discharging gas and liquid materials inside the bag main body 21 to the outside is provided further. Thus, the bag main body 21 is taken out to the outside of the body without spilling the intracelom tissues once fetched to the bag main body 21.